

MLC 104 Series

MEDIALINK™ CONTROLLERS

- Universal projector control
- Integrated IP Link™ (MLC 104 IP only)
 - Proactive maintenance
 - Event scheduling
 - Remote technical support
 - Theft alerts
- Configurable backlit buttons
- Inactivity timer for display shut-off
- Front panel security lockout
- Volume control with five level-status LEDs
- Versatile mounting options



The Extron MLC 104 Series of MediaLink Controllers offer simple user interfaces and centralized room control. As part of the MediaLink System, the flexible MLC 104 is an intuitive remote control panel engineered to streamline operations and control of audio, video, and computer sources into an easy-to-use A/V system.



Extron® Electronics

www.extron.com

DESCRIPTION

The Extron **MLC 104** MediaLink Controllers are easy-to-use, simplified control panels for any small classroom or boardroom. They standardize the control interface for all systems, making projection systems simple to use. Standardization also makes setup and maintenance easier to support.

The flexible MLC 104 acts as an extended remote control panel. It is not a switcher; instead, as a controller, it tells the projector when to switch between its various inputs. Presenters with little or no training can walk into any multimedia classroom and operate the A/V system. The MLC 104 includes universal projector control for a projector's power, input switching, and volume control. For one-button functionality, the MLC 104 features backlit buttons that can be custom-labeled for easy identification. Because the buttons illuminate, they are helpful for presenters in low-light environments.

The MLC 104 IP features Extron's innovative IP Link™ Ethernet control technology to enable remote diagnostics, asset management and support.

Especially vital for high traffic areas, the MLC 104 and MLC 104 IP are housed in secure two-gang enclosures. They have the same look and functionality regardless of where they are mounted: a lectern, desk, wall, rack, or wall box.

FEATURES

- **Universal projector control** – The MLC 104 has a dedicated port for communicating with virtually any projector or display via IR or RS-232. Control drivers can be downloaded or created using the intuitive software.
- **Projector power control** – Discreet ON and OFF backlit buttons simplify system operations and eliminate the need for external projector remote.
- **Bi-directional RS-232 port for universal projector control** – The MLC 104 has a dedicated port for communicating with virtually any projector or plasma via IR or RS-232. Control drivers can be downloaded or created using the intuitive software.
- **RS-232 port for MediaLink switcher support** – For controlling an optional Extron MediaLink switcher, such as the MLS 406SA.
- **IP firmware upgrade** – The MLC 104 models without IP Link can be field upgraded to full IP-enabled devices with the same functionality as the MLC 104 IP models.
- **Configurable buttons** – can be set up to trigger a variety of functions such as selecting an input, sending a serial or IR command, or controlling a relay.
- **Tri-color, backlit, easy to label buttons** – can be customized for each installation and provide easy operation for presenters in low-light environments.
- **Inactivity timer for display shut-off** – Adjustable timer control provides automatic shutdown to preserve energy, prevent plasma burn-in, or extend projector lamp life.
- **Front panel security lockout** – When the security lock-out mode is engaged, the MLC 104's front panel becomes inoperable unless a user-defined PIN number is entered.
- **Volume control** – Volume control provides adjustment of projector or MediaLink switcher audio levels, allowing for convenient, centralized control without additional remotes. The five LEDs provide clear indication of the current audio setting.
- **Secondary Control Panel** – The optional SCP 104 duplicates the MLC 104's front panel buttons and offers a second access point within a room.
- **AAP openings** – The MLC 104 AAP and MLC 104 IP AAP fit into four-gang wall plates and include four single space Architectural Adapter Plate (AAP) openings. Blank AAPs are not included. The openings allow for integration with many of Extron's AAPs, including signal pass-through connections.
- **Color choices** – The MLC 104 controllers are available in black, white, or RAL9010 white for architectural integration.
- **Mounting options** – Flexibility in installation allows for numerous architecturally compatible possibilities.

System Configuration

Extron creates and administers a wide selection of commonly used projector control drivers. These RS-232 drivers are essential for the MLC 104 to effectively communicate with a display device. They enable the MLC 104 to control basic projector functions such as power, input selection, and volume adjustment.

The MLC 104 is designed to work with almost every Extron switcher, including the MediaLink Switchers (MLS) and VersaTools™ MediaLink Switchers, which are specifically designed to complement MediaLink controllers. Each product of the MLS line switches video, computer-video, and/or audio and provides unique features such as volume and tone control. The MLC 104 can also work as a stand-alone device to control a projector without the aid of a switcher.



IP Link™ Ethernet Control

The MLC 104 IP is equipped with Extron's IP Link, an IP integration technology specifically engineered to meet the needs of professional A/V environments — from small K-12 classrooms to large universities and businesses. IP Link Global Viewer, a free Web-based asset management and remote control software application, is specifically designed to work with products that include IP Link technology. It facilitates key asset management functions including:

- **Proactive maintenance** – The Global Viewer can store and display information about connected devices like serial numbers, owner identification, maintenance history, and installed firmware versions. This centralized data can be collected and used to reduce maintenance costs and guide future purchasing decisions. For instance, a projector can be polled routinely to track lamp usage and total life time. When lamp usage reaches a predetermined number of hours, the MLC 104 IP can send a report via e-mail.
- **Event scheduling** – The Global Viewer uses the real-time clock and calendar in IP Link-enabled devices to maximum value. User-defined tasks are easy to configure and schedule with the Global Viewer Configurator (GVC) and don't require high-level programming skills. For instance, an administrator can schedule all projectors to turn off every Friday at close of business.
- **Remote technical support** – Technicians can troubleshoot systems remotely because the Global Viewer provides the real-time status of connected devices. Information such as connection status, power state, and current input selection is displayed in a central location. For many connected devices, technicians can toggle power on or off, switch sources, control volume, and more without leaving their office. Many common problems can be resolved without a trip to where the equipment is located.
- **Theft alerts** – IP Link-enabled products are always on and routinely poll their attached devices for status information. If any serially controlled device such as a projector or display is physically disconnected from the serial port, the MLC 104 IP monitoring its status will know immediately. In such an event, it can send an e-mail message notifying security personnel of the possible theft. For fast action, e-mails can be sent to multiple addresses including cell phones and wireless PDAs.

CONTROL/REMOTE — MLC CONTROLLER HOST PORTS

Serial control port	2 RS-232: (1) 3.5 mm direct insertion captive screw connector, 3 pole; 1 front panel 2.5 mm TRS jack
Baud rate and protocol	38400, 8 data bits, 1 stop bit, no parity
Serial control pin configurations.....	Direct insertion captive screw connector: 1 = TX, 2 = RX, 3 = GND 2.5 mm TRS jack: tip = TX, ring = RX, sleeve = GND
Ethernet control port	1 RJ-45 female
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Ethernet default settings.....	Link speed and duplex level = autodetected IP address = 192.168.254.254, subnet mask = 255.255.0.0, default gateway = 0.0.0.0 DHCP = off
Extron remote key pad control.....	(1) 3.5 mm direct insertion captive screw connector, 3 pole
Program control	Extron's configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Netscape® Navigator®, Telnet

CONTROL — PROJECTOR/DISPLAY

Projector control port.....	(1) 3.5 mm direct insertion captive screw connector, 3 pole programmable for RS-232 control (± 5 V) or TTL level (0 to 5 V) infrared control up to 1 MHz
Baud rate and protocol (RS-232)	115200, 57600, 38400, 19200, 9600 (default), 4800, 2400, or 1200 baud (configurable); 8 data bits; 1 (default) or 2 stop bits; no parity (default), or even or odd parity

CONTROL — SWITCHER

Switcher control port	(1) 3.5 mm direct insertion captive screw connector, 3 pole, for RS-232 control (± 5 V)
Baud rate and protocol	115200, 57600, 38400, 19200, 9600 (default), 4800, 2400, or 1200 baud (configurable); 8 data bits; 1 (default) or 2 stop bits; no parity (default), or even or odd parity

GENERAL

Power.....	Supplied by an optional MediaLink™ switcher or the included external power supply
External power supply	100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; to 12 VDC, 1 A, regulated
Power input requirements	12 VDC, 0.5 A
Rack mount	Yes, with optional rack mounting kits, and also wall- and furniture-mountable with optional mounting kits
Enclosure type	Metal
Enclosure dimensions	
MLC 104 faceplate	4.5" H x 4.6" W x 0.1" D (11.4 cm H x 11.7 cm W x 0.3 cm D) (2 gang)
MLC 104 AAP faceplate	4.5" H x 8.3" W x 0.1" D (11.4 cm H x 21.2 cm W x 0.3 cm D) (4 gang)
Device	2.75" H x 3.5" W x 1.8" D (7.0 cm H x 8.9 cm W x 4.6 cm D) (fits some 2 gang boxes) (Depth excludes knob and buttons.)
Product weight	1.9 lbs (0.9 kg)
Shipping weight.....	6 lbs (3 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings.....	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor
NOTE: All nominal levels are at $\pm 10\%$	

Model Part Numbers

MLC 104 (Controller Only)	60-665-00
MLC 104 (black)	60-665-02
MLC 104 (white)	60-665-03
MLC 104 (RAL9010 white).....	60-665-05
MLC 104 L (black)	60-665-32
MLC 104 L (white)	60-665-33
MLC 104 L (RAL9010 white)	60-665-35
MLC 104 AAP (black)	60-665-12
MLC 104 AAP (white)	60-665-13
MLC 104 AAP (RAL9010 white)	60-665-15
MLC 104 IP (Controller Only)	60-573-00
MLC 104 IP (black)	60-573-02
MLC 104 IP (white)	60-573-03
MLC 104 IP (RAL9010 white).....	60-573-05
MLC 104 IP L (black)	60-573-32
MLC 104 IP L (white)	60-573-33
MLC 104 IP L (RAL9010 white)	60-573-35
MLC 104 IP AAP (black)	60-573-12
MLC 104 IP AAP (white)	60-573-13
MLC 104 IP AAP (RAL9010 white)	60-573-15

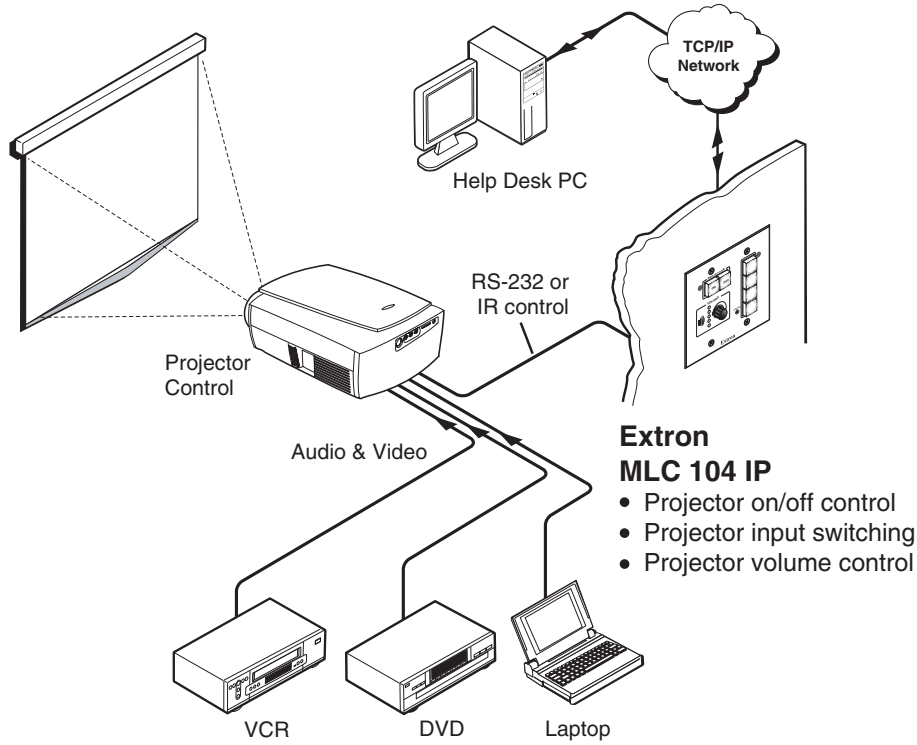
Included Accessories

MLC 104 / MLC 104 AAP	
12V/1Amp power supply	70-055-01
2-gang/4-gang mud ring	70-086-X1/X3
Button labels text	33-954-01
Button labels icon	33-955-01
9 pin, 2.5mm RS-232 Cable	70-355-01
MLC 104 L	
12V/1Amp power supply	70-055-01
Button labels text	33-954-01
Button labels icon	33-955-01
9 pin, 2.5mm RS-232 Cable	70-355-01
MLC 104 IP / MLC 104 IP AAP	
12V/1Amp power supply	70-055-01
2-gang/4-gang mud ring	70-086-X1/X3
Button labels text	33-954-01
Button labels icon	33-955-01
6' RJ-45 crossover cable	26-591-01
MLC 104 IP L	
12V/1Amp power supply	70-055-01
Button labels text	33-954-01
Button labels icon	33-955-01
6' RJ-45 crossover cable	26-591-01

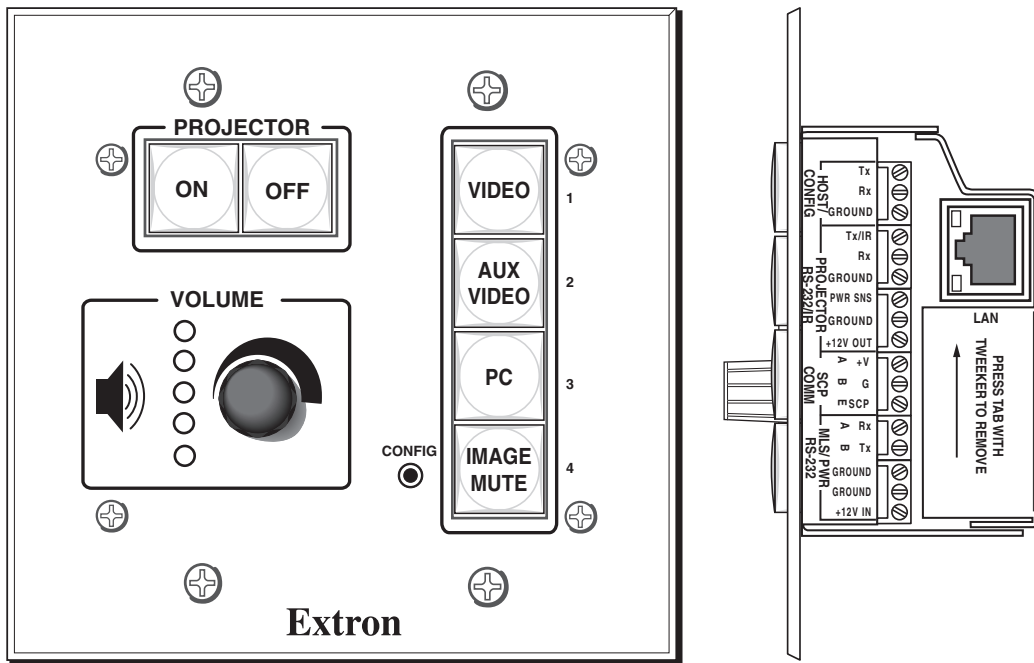
Optional Accessories

SCP 104	60-672-XX
UC 50'	26-518-01
IR Emitter	70-283-01
9 pin 2.5 RS-232 Cable	70-335-01
MLA-VC10	60-502-01
2-gang mudring.....	70-086-0X
4-gang mudring.....	70-086-0X
Display power sensor	60-271-01
IR broadcaster	60-272-02
P/S 100 power supply	60-357-01
12V/1Amp power supply	70-055-01
2-gang back box	980057/980084
4-gang back box	980097
EWB-2-gang	60-453-0x
EWB-4-gang.....	60-455-0x
EWB-10X8	60-457-0x
SMB-2-gang	60-640-02
SMB-4-gang.....	60-642-02
SMB-6-gang.....	60-644-02
UCM 10x8	70-341-02/03
UCM RAAP	70-344-02/03
MLM 104 6GWP	70-355-02
MLM 104 LAAP	70-357-02/03
MLM 104 EC (RAL9010 white).....	70-357-10
MLM 104 MK	70-357-2X
MLM 104 AAP EC (RAL9010 white)	70-358-10
Button label int'l	33-1167-0X
MLS 100 A	60-497-01
MLS 102 VGA	60-497-04
MLS 103 V	60-497-02
MLS 103 SV	60-497-03
MLS 304MA/SA	60-550-01/02

APPLICATION DIAGRAM



PANEL DRAWING



Extron Electronics, USA
1230 South Lewis Street
Anaheim, CA 92805
800.633.9876 714.491.1500
FAX 714.491.1517

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort, The Netherlands
+800.3987.6673 +31.33.453.4040
FAX +31.33.453.4050

Extron Electronics, Asia
135 Joo Seng Rd. #04-01
PM Industrial Bldg., Singapore 368363
+800.7339.8766 +65.6383.4400
FAX +65.6383.4664

Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan
+81.3.3511.7655 FAX +81.3.3511.7656

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